Journal of Anatomy

J. Anat. (2010) **216**, p543 doi: 10.1111/j.1469-7580.2010.01210.x

BOOK REVIEW

Medical Statistics at a Glance

3rd edn by Aviva Petrie, Caroline Sabin (ISBN 978-1-4051-8051-1. Price: £21.99.) Oxford: Wiley Blackwell, 2009.

Medical Statistics at a Glance is aimed at medical, medically related or biomedical science students with little background in mathematics or statistics. As such the authors have aimed at providing a text that combines what students need to know about statistical theory with some of the practical skills associated with the acquisition of data and data analyses. Such a text is key. Students often find statistics bewildering and many struggle to make sense of what is required in terms of experimental design, data capture and appropriate analyses.

The authors have approached the problem well; the chapters on basic statistical theory are logically structured and draw the reader through simple concepts such as the mean, median and mode, thus steadily building the reader's confidence so that concepts such as variance and standard deviation become very clear. The authors then take the reader through concepts associated with distributions, from which the authors introduce the standard error of the mean and tie into this a nice simple rule of thumb to inform the reader why and when to use standard deviation or standard error. The mix of statistical theory and the practicalities of data collection is pretty much perfect for the target audience. The chapter on standard error of the mean is followed by a lovely series of chapters covering study types, study design, the use of controls, bias, stratification and the identification of experimental endpoints, which in turn lead the reader onto concise chapters on clinical trials, cohort studies/relative risk and case control studies/odds ration. These chapters are then followed by good, logical, uncluttered chapters on hypothesis testing, including concise information about the parametric and non-parametric tests required to compare paired and unpaired data. The simplicity of the style in this book makes the text remarkably readable for a stats text and leads the reader through chapters covering concepts such as analyses of variance (ANOVA) and the Kruskal–Wallis test, testing categorical data, correlation and regression analysis, calculation of sample size and ways in which to present the results of statistical analyses. What is really nice is that the authors have used their obvious experience of teaching statistics to inform the content of the book. For example, many students are confused about when to use a specific statistical test. To address this problem, the authors have included two lovely flow charts, in a readily accessible position on the inside of the back cover, which make this decision-making process almost foolproof. The only failing of *Medical Statistics at a Glance* is that it could do with a little bit more on the inverse variance method of calculating the weighted means and the calculation of the weighted mean variance in the meta-analysis chapter.

Overall, the 3rd edition of *Medical Statistics at a Glance* meets its aims in that it functions as a good, quick reference guide that simplifies statistical theory so that a relative statistical novice can gain confidence and quite a good knowledge of statistics and its appropriate use. As such, this is a text that should be on every medical, or medically related, student's reading list.

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